

Serial No. 10/556,559
Office Action dated: August 3, 2010
Amendment D dated: October 20, 2010

Amendments to the Claims:

Please amend claim 39 as follows:

1 - 28. (Cancelled)

29. (Previously Presented) A device for automated evolutionary assistance to air traffic controllers including a computer having a software program permitting the receipt of data for equipping an air traffic control system including flight plans of aircraft and Radars and elaborating and displaying them to air traffic controllers, the air traffic controllers having a radiotelephony link for communicating with the aircraft, the device comprising:

a software module for establishing and updating a computer agenda, which is a list of the aircrafts' potential conflicts on the basis of any information and computation means of the computer;

said software module configured for selecting, among said computer agenda, potential conflicts on crossing trajectories which are solvable by modification(s) of aircraft speed, climbing or descending rates and lateral shift of route, said modification(s) being so minor as to not interfere with the air traffic controllers' decision making processes; and

a data link between said computer and an on-board computer of the aircraft, the data-link being used for automatically:

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(i) collecting complementary data from said on-board computer of the aircraft, said complementary data including flight data for establishing said computer agenda, and

(ii) transmitting said minor modification(s) of flight parameters to said on-board computer for execution by the aircraft without requiring the air traffic controllers' prior agreement.

30. (Previously Presented) The device according to claim 29, wherein said software module is further configured for elaborating optimal solutions to residual potential conflicts which would interfere with the controllers' decision making processes.

31. (Previously Presented) The device according to claim 29, wherein said software module is configured for determining in real time among said potential conflicts within said computer agenda those which are false conflicts and displaying the false conflicts on a display of a sector in charge of the aircraft.

32. (Previously Presented) The device according to claim 29, wherein said software module is configured for updating potential conflicts into said computer agenda even before the aircraft have entered in a control sector with a potential conflict.

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33. (Previously Presented) The device according to claim 29, wherein said software module is configured for selecting in said computer agenda particularly sensitive conflicts that lead to the occurrence of conflict clusters that are difficult to solve.

34. (Previously Presented) The device according to claim 33, wherein said software module is configured for proposing solution(s) for avoiding such occurrence on a display screen of the air traffic controllers presently in charge of the aircraft when said conflicts only occur in a following sector.

35. (Previously Presented) The device according to claim 33, wherein said software module is configured for proposing transfer conditions of an aircraft to a following sector to the air traffic controllers.

36. (Previously Presented) The device according to claim 29, further including a display device for displaying to air traffic controllers' icons in bi-univocal relationship with aircraft pairs on said computer agenda, said icons serving as a virtual

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keyboard for addressing in return specific messages to the computer concerning said aircraft pairs.

37. (Previously Presented) The device according to claim 36, wherein said display device is configured for displaying the aircraft pairs of said computer agenda, and a specific icon that makes displaying the virtual keyboard specifically adapted to the situation when designated by the air traffic controllers.

38. (Previously Presented) The device according to claim 30 further including a display device for displaying on said computer agenda an icon that indicates the air traffic controllers' desire to know the solution(s) elaborated by the computer and means for informing said computer of the chosen solution when designated by the air traffic controllers.

39. (Currently Amended) The device according to claim 38, wherein said computer ~~module~~ is configured for automatically transferring the chosen solution to concerned aircraft for execution.

40. (Cancelled)

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41. (Cancelled)

42. (Cancelled)

43. (Previously Presented) The device according to claim 29, further including a display device for displaying each aircraft pair in potential conflict as a point and its speed vector, the coordinates of said point being respectively the delay between a present moment and a moment when said aircraft pair will have a minimum longitudinal separation, and the separation distance at the present moment.

44. (Previously Presented) The device according claim 43, wherein said computer module is further configured for associating a label providing any necessary data concerning the aircraft with the point representing the aircraft pair.

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45. (Previously Presented) The device according to claim 43, wherein said computer module is further configured for associating an indicator giving a vertical separation distance when their horizontal separation distance is minimum with the point representing the aircraft pair.

46. (Previously Presented) The device according to claim 43, wherein a designation by a controller of an aircraft on any display screen makes the aircraft and an aircraft conflicting with it appear on other display screens.

47. (Previously Presented) The device according to claim 39 wherein said computer module is configured for receiving data confirming the proper execution of instructions from said aircraft.

48. (Previously Presented) The device according to claim 47, wherein said computer module is configured for sending a message to two conflicting aircraft for sub-delegating to the conflicting aircraft the responsibility of insuring their safe separation by their own means according to clearances chosen among a set of possible conflict resolution manoeuvres.

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49. (Previously Presented) The device according to claim 48, wherein said computer module is configured for insuring automatic display of the delegated conflict, so that said computer agenda provides a permanent monitoring board displaying a list of the delegated conflicts and a list of potential conflicts still to be solved.

50. (Cancelled)

51. (Cancelled)

52. (Previously Presented) A method for automated evolutionary assistance to air traffic controllers including a computer having a software program permitting the receipt of data for equipping an air traffic control system including flight plans of aircraft and radars and elaborating and displaying them to air traffic controllers, the air traffic controllers having a radiotelephony link for communicating with the aircraft, the method comprising:

establishing and updating a computer agenda, which is a list of the aircrafts' potential conflicts on the basis of any information and computation means of the computer;

selecting potential conflicts on crossing trajectories which are solvable by modification(s) of aircraft speed, climbing or descending rates, and lateral shift of route,

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said modification(s) being so minor as to not interfere with the air traffic controllers' decision making processes;

establishing a data link between said computer and an on-board computer of the aircraft, the data-link being used for automatically:

(i) collecting complementary data from said on-board computer of the aircraft, said complementary data including flight data for establishing said computer agenda, and

(ii) transmitting said minor modification(s) of flight parameters to said on-board computer for execution by the aircraft without requiring the air traffic controllers' prior agreement.